



Epitrix australis sp. nov.

apical segments more dilated. Prothorax shining black, about twice as broad as long, very finely and not closely punctured, the sides slightly rounded and margined, the anterior angles blunt, a transverse impression in front of the basal margin. Scutellum very small. Elytra black slightly broader than the base of the prothorax, widest about the middle, thence rounded to the apex, irregularly punctate-striate. Legs with the femora blackish and all the tibiae and tarsi fulvous, clothed with very fine short pubescence. Under-side with the ventral segments of the abdomen tinged with fuscous, and pubescent.

♂ with the anterior tarsi more dilated.

W. Australia, Lesmurdie. 5 specimens collected by M. C. Russell and forwarded by L. Glauert; on *Drosera pallida*. Holotype and 4 paratypes.

This species is allied to *E. picea* Waterh. from W. Australia, King George's Sound, collected by C. Darwin, which was originally described as *Haltica*, and transferred by Weise in 1923 to *Epitrix*. It differs in being twice the size and chiefly in the shape of the prothorax which is not so contracted in front.

NOTES ON INSECTS ASSOCIATED WITH SUNDEWS (*DROSERA*) AT LESMURDIE

By M. C. RUSSELL, Como.

As a supplement to the foregoing papers by Dr. China and Mr. Bryant I append the following notes from my field observations on specimens discussed by them, together with a brief note on the Scorpion Fly, *Harpobittacus australis*. At the time the field notes were written I was not aware that the Mirid bugs were of two different species so that the following notes must be read as applicable to both, at least until further work reveals specific differences in their habits.

Cyrtopeltis spp. from *Drosera pallida* Lindl.

Drosera pallida, one of the climbing species, appears above ground in the latter part of May and grows steadily to a height of about three feet before the terminal inflorescence develops. The lower, older, leaves tend to dry and redden with age and the bugs are found near the younger green parts at the top of the plant, sometimes on the inflorescence.

In September 1952, when the bugs were first collected, the plants were well developed and, from the fact that the insects by this time were all fairly mature (mostly fully winged), I conclude that development is parallel with the growth of the plant. To find young nymphs one would probably have to examine the younger plants earlier in the season.

These insects commonly take up a position on the under surface of the goblet-shaped leaf but movement over the sticky tentacles of the upper surface is also quite common and seems to be but little restricted by the mucilage which is such an effective trap for other insects. One winged adult was seen under the lens to place a tarsus directly on a gland and later move away without difficulty. Another specimen, *D. erythrorrhiza*, became thoroughly covered with mucilage as I attempted to collect it from the upper surface of a leaf and it was soon after seen cleaning its antennae, one at a time, and its proboscis, by systematic use of its first pair of legs in the manner adopted by a housefly.

The usual capacity of these insects for free (or almost free) movement over the sticky surface of the leaves may be due in part to the fact that rarely are more than two legs placed at one time on glands. The others are placed on the non-sticky surface of the leaf or on the pedicels of the tentacles. With four legs thus free the other two can be readily extricated from the mucilage in which they were placed.

Although they seem never to be permanently trapped like other insects by the leaves of the Sundew it is nevertheless true that their movements are often impeded by the secretion, particularly when they are alarmed.

Two adults have been seen, each with a leg missing. Perhaps some emergency mechanism provides for the forfeiture of a leg irretrievably stuck.

In no case was feeding definitely observed although on one occasion the proboscis of an adult winged form seemed to be inserted in the tissues of a sepal on *D. pallida*. This observation is subject to confirmation, particularly in view of Dr. China's authoritative assertion that the adult, at least, is carnivorous. It should be remarked that the proboscis is exceedingly fine and difficult to observe with certainty in the field.

Several of the insects were seen to take flight from *D. pallida* and their flight seemed relatively strong for the very short distance they could be observed against a background of bush.

Cyrtopeltis spp. from *Drosera erythrorrhiza* Lindl.

The insects live in a somewhat different setting on *D. erythrorrhiza* which possesses a flat rosette of leaves, green with red glands when young but rapidly reddening throughout as the plant matures (except in shaded localities). The axis of each leaf is nearly free of tentacles and covered only with short downy hair. The young bugs may sometimes be seen in this region, protected by an archway of tentacles, but it is more usual to find them at the central axis of the rosette where the leaf petioles converge to form a depression. Here, too, adults are found, but they may also be seen running freely over the tops of the tentacles which cover most of the upper surface of the leaf.

The bulb of *D. erythrorrhiza* gives a strongly positive reaction for starch which must be built up by translocation of sugars from the leaves. The centre of the rosette might therefore be expected to be a rich feeding site for sap-feeding insects. For predatory insects it would be a tactical site like the centre of a spider's web.

D. erythrorrhiza appeared above ground at Lesmurdie in late July 1952, and died off in October except for a few plants in shaded localities which carried over to the next month. During September many of these plants were found harbouring both nymphs and adults, suggesting the existence of at least two broods, one much later than the other. On October 12 two winged adults were found in the gravel near one of the few remaining fresh plants and as late as November 9 one specimen was seen beside a wilting plant. A particular interest attached to this specimen in that its wings were by no means fully developed despite the lateness of the season.

Cyrtopeltis spp. from *Drosera stolonifera* Endl.

Unfortunately specimens collected from this Sundew were not forwarded for identification but Dr. China has suggested (p. 1) that both species probably occur on this plant as on the two foregoing.

D. stolonifera is an erect, sometimes branched, plant found at Lesmurdie from the end of July to the end of October. It is characterised by vivid green and red colouring until late in its season when the above-ground parts begin to brown. Only small flightless nymphs were at first seen on this species (early September) but on October 4 winged forms were found.

Cyrtopeltis nymphs are usually found near the base of *D. stolonifera* from which position they drop to the ground for shelter among stones when disturbed. Both nymphs and adults move over and among small stones with agility but they are easily caught by picking up the stones to which they cling.

The red markings of these insects match the red glands of *D. stolonifera* and the general red coloration of the more exposed specimens of *D. erythrorrhiza* in a striking manner.

Epitrix australis Bryant.

While collecting *Cyrtopeltis* from *Drosera pallida* in September, 1952, it was noticed that the white petals of the plant were being eaten by the black beetle, *Epitrix australis*, described in this number by Mr. Bryant. Although damage to *D. pallida* was extensive adjacent specimens of *D. macrantha* were untouched.

Scorpion Fly, *Harpabittacus australis*.

This predator has been seen more than once feeding on small insects caught on the leaves of *D. pallida*. Its long, unusually prehensile legs enable it to grasp the stem and petioles of the Sundew, keeping its body clear of the leaf. This is obviously a casual commensalism not without danger to *Harpabittacus*.

BIRD-LIFE AT CARON

By E. H. SEDGWICK, Government School, Woorloo.

THE ENVIRONMENT

Caron is situated in the wheat-belt, 168 miles to the north and slightly east of Perth.

During 1947 13 in. of rain were recorded, but 1948 was much drier. Exact figures for 1948 are not available because the official rain gauge was damaged by a storm early in the year. Winters were mild but periods of extreme heat were experienced in summer.

Native vegetation is of the scrub-plain type and comprises dense thickets of *Acacia* and *Casuarina* in parts. Other areas which have apparently been cleared and then allowed to revert, or which have, perhaps, been swept by fire, are less densely vegetated and produce a great variety of shrubs including *Acacia*, *Casuarina*, *Hakea*, *Grevillea*, *Verticordia* and *Calothamnus*. There are occasional mallee (*Eucalyptus* sp.) thickets and scattered groups of *Callitris*.

The Railway Dam catchment area was situated in a "break-away," the floor of which supported York Gum (*Euc. foecunda*) and more nearly approached forest than any other locality in the study area. This catchment area was rich in bird-life and a favoured resort for breeding birds. Pools sometimes remained in the catchment channels for some time after rain, but the dam itself, being entirely roofed, had little influence upon bird-life.

Most arable land was at some distance from the siding, and comparatively little of the land adjacent to the townsite was under cultivation.

SCOPE OF OBSERVATIONS

Observations were made largely within two miles of the townsite during the years 1947 and 1948.

NOTES ON INDIVIDUAL SPECIES

At the time of leaving Caron I did not propose publishing an annotated bird-list for the area, hence a number of observations